Econ 115: November 3, 2009: The Global Income Distribution as of 1980

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Before 1870: industrial technology not that great shakes compared to coolies where labor is abundant—truly useful only where coal and iron are really cheap. This changes around 1870…

1870-1914: Some diffusion of truly useful industrial technologies—to central and southern Europe, to scattered locations around the globe, to regions of temperate European settlement, to Japan, and to "plantations"—but even though the world is small in transport costs and communications, it is still large from the point of view of institutional change. Remember the Kaiping coal mines…

1914-1945: An era of chaos. Wars. Revolutions. Great Depressions. Retreat of the global division of labor—but the building-up of a large backlog of miraculous but largely unapplied technologies…

1945-1980: The Thirty Glorious Years—the Golden Age of growth in the North Atlantic broadly defined, the OECD. But what happened outside? Note that it is not that the world or large chunks of it were becoming poorer over 1945-1980 or indeed over 1870-1980. They were just not becoming richer nearly as fast as the North Atlantic core…

First, Second, and Third Worlds

Some thirty years ago geo-politicians and commentators spoke constantly of the countries of the globe as divided into three "worlds": First, Second, and Third.

The "First World" was made up of those industrial countries that rallied to the side of the United States in the post-World War II Cold War.

The "Second World" was made up of the Soviet Union and its satellites.

The "Third World" appeared and grew as decolonization raised the number of independent nations seated at the U.N.; as many Latin American nations recognized that they had more interests in common with the newly-independent and decolonized than with, say, Sweden; and as poorer Communist-ruled nations that had not been occupied by the Russian army (Yugoslavia, China, and later North Korea and Vietnam) began to flex their muscles and assert their independence from Moscow. To be of the "Third World" was to try to play off the United States against the Soviet Union (and hopefully receive large amounts of aid from both). To be of the "Third World" was to stress the differences between one's own polity and economy and that of the industrial powers of the North Atlantic. To be of the "Third World" was to be—relatively—poor.

Third World = Third Estate?

Other principles of divergence: "free world" vs. "iron curtain"; "industrialized" vs. "non-industrialized"; "fourth world"

The Biggest Source of Divergence in 1980: The Iron Curtain

Not clear in 1950 or 1960 that this was or would be true—but very clear by 1980…

Matched Pairs of Countries, 1990

East-Block Country	GDP per Capita	Matched West-Block Country	GDP per Capita	Relative Gap
North Korea	700	South Korea	7660	0.91
China	490	Taiwan	9550	0.95
Vietnam	170	Philippines	850	0.8
Cambodia	150	Thailand	2110	0.93
FSR Georgia	580	Turkey	2970	0.8
Russia	2340	Finland	19300	0.88
Bulgaria	1140	Greece	7390	0.85
Yugoslavia	3240	Italy	19840	0.84
Hungary	3350	Austria	23510	0.86
Czech R.	2710	Germany	23560	0.88
Poland	2260	Sweden	24740	0.91
Cuba	460	Mexico	3610	0.88
Geometric Mean	**930**	**Geometric Mean**	**8030**	**0.88**

This came, by and large, as a surprise—virtually nobody in the 1930s or 1940s, and few people in the 1950s and early 1960s, predicted this…

Why Was the Eastbloc so Poor?

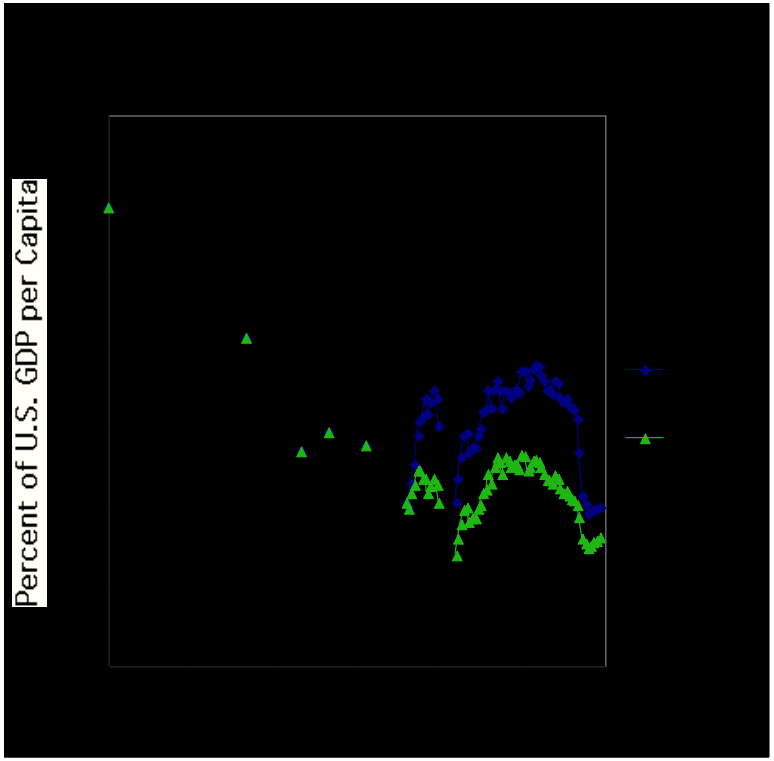
Markets vs. hierarchies…

In the Soviet Union the production and distribution of commodities was determined by vast bureaucracies: Gosplan, Gossnab, Gostroi, and Goskontrud. Fifty branch ministries. Several hundred departments. 46,000 industrial enterprises, 50,000 state and collective farms; 47,000 construction enterprises, and 1,000,000 wholesale and retail trade enterprises.

Planning began with directives from on high, that Gosplan used to produce numerical targets and priorities, and that were specified in increasing detail down the administrative hierarchy until they became specific targets for enterprises: your factory will produce five million ball bearings next year. Enterprises respond to these assignments by requesting machines, buildings, raw materials, workers, and other resources. Central authorities strive for maximal performance. Subordinates plead their inability to perform their assigned tasks. The outcome is—in the eyes of the top, at least—a rough, tolerable balance between supplies and demands.

When it becomes impossible to do what was commanded because the plan is inconsistent or impossible, subordinates make critical choices on the spot in which they have every incentive to appear to fulfill the plan. Tractor components are produced that do not fit with other components; buildings are built without the utility connections to make them habitable. Attempts by central planners to bring enterprise production into closer conformity with social needs generate additional inconsistencies, as central-planner interventions are made too quickly and made without accurate information. The resulting system lacked flexibility and lacked incentives: every incentive is to meet the plans and desires of superiors, and not to achieve beneficial economic consequences. The continued operation of the system depended in large part on human altruism. Humans are in fact altruistic: most social organizations are run to a large degree on gift-exchange relationships that depend on human sociability. But is altruism alone enough to maintain a well-functioning social system?

How Rich Was the Soviet Union?



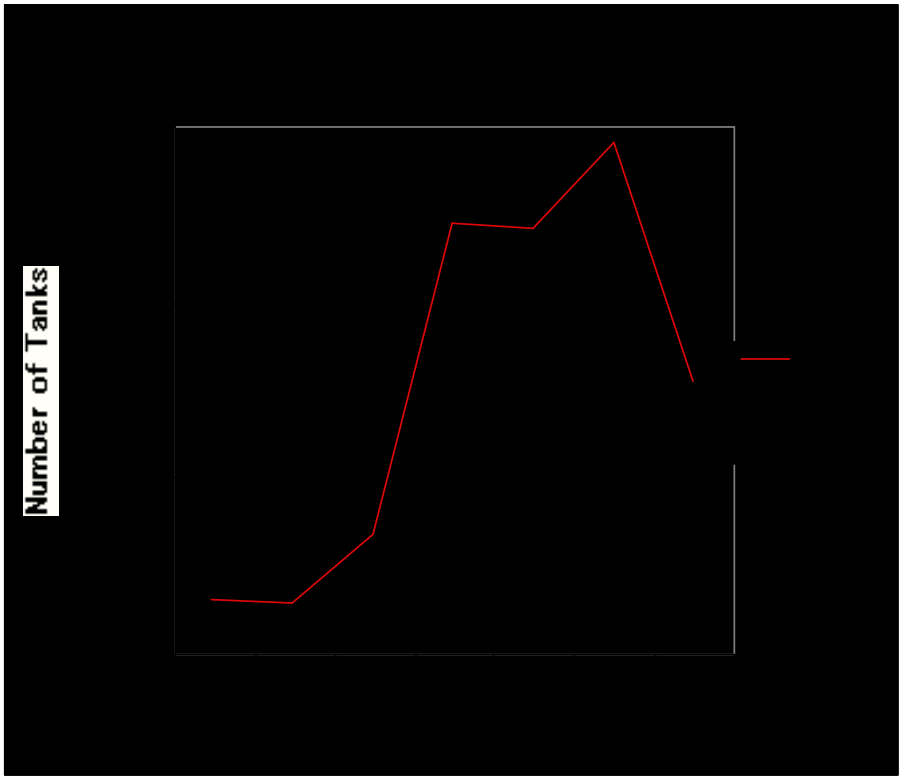
How Rich Was the Soviet Union? II

Angus Maddison's estimates of GDP per capita in what was to be the Soviet Union relative to the United States suggest a social system that had very limited ability to catch up to the levels of material productivity found in the industrial core.

Maddison's estimates of Soviet productive potential—GDP per worker—as a fraction of the U.S. level and my estimates of real national incomes as a fraction of the U.S. level. Which estimate you prefer of the overall state of the Soviet economy relative to the American depends on who you are. If you are V.I. Lenin, J.V. Stalin, or L.I. Brezhnev, you almost surely prefer the higher "Maddison" series on the productive power and potential of the Soviet economy relative to the American one. The point is to build a powerful productive engine that can then be applied to advance the purposes of the regime—whether in projecting military power, in aiding governments favorable to the socialist camp around the world, in making impressive displays of technological power, or in gathering resources for a further leap into greater degrees of industrialization. From their standpoint the first wave of Soviet industrialization—the wave under Stalin, from 1928 to 1940 and then again in the repair of the awful devastation wreaked by the Nazis after World War II—was quite successful. It took a country that had perhaps one-fifth the per-capita productive power of the United States in 1928, and leaped forward to somewhere between one-third and two-fifths the per-capita productive power in a remarkably short time.

But if you are N.S. Krushchev or M.S. Gorbachev, then you have a very different evaluation of the success of the Soviet industrialization program..

Tank Production During World War II



Advantages of the Market

The Soviet Union singularly failed to produce quality consumer goods, or a varied crop of foodstuffs, or habitable apartments. As Richard Ericson assessed the harvest of seventy years of Soviet rule, it left the Communists' successors with:

> over sixty years where building physical capital and institutions has been largely an arbitrary, willful political act, independent of economic considerations. The result is a capital stock that is massively obsolete, abuse and destruction of the resource base, and an environmental poisoning unmatched in history. Most Soviet steel output uses a technology all but abandoned by the rest of the world. The bulk of investment goes to the backlog of unfinished, and never to be finished, construction. New industrial facilities that take less than two years to build in the rest of the world remain under construction for over fifteen years. Vast amounts of expensive imported equipment rusts at ports, rail sidings, and construction sites. Large oil reserves have been rendered inaccessible by use of technologies allowing rapid and easy meeting of quotas. The entire Aral Sea area of central Asia has been poisoned, the sea itself reduced to a salinated cesspool and the agriculture around it ruined by excessive use of chemicals, all in pursuit of the plan...

How does a market system do a better job?

- First, it imposes a reality check on every organization
- Second, it imposes a reality check on every line of business—is this what consumers want?
- Third, the market possesses enormous flexibility: organizations and individuals can change their production patterns any time they choose
- Fourth, politics matters: the Soviet bloc and pollution…

Adoption of the market economy has the capacity to multiply economic prosperity by a factor of two to five.

But divergence not just a fact of the Iron Curtain…

Maddison's Sixteen

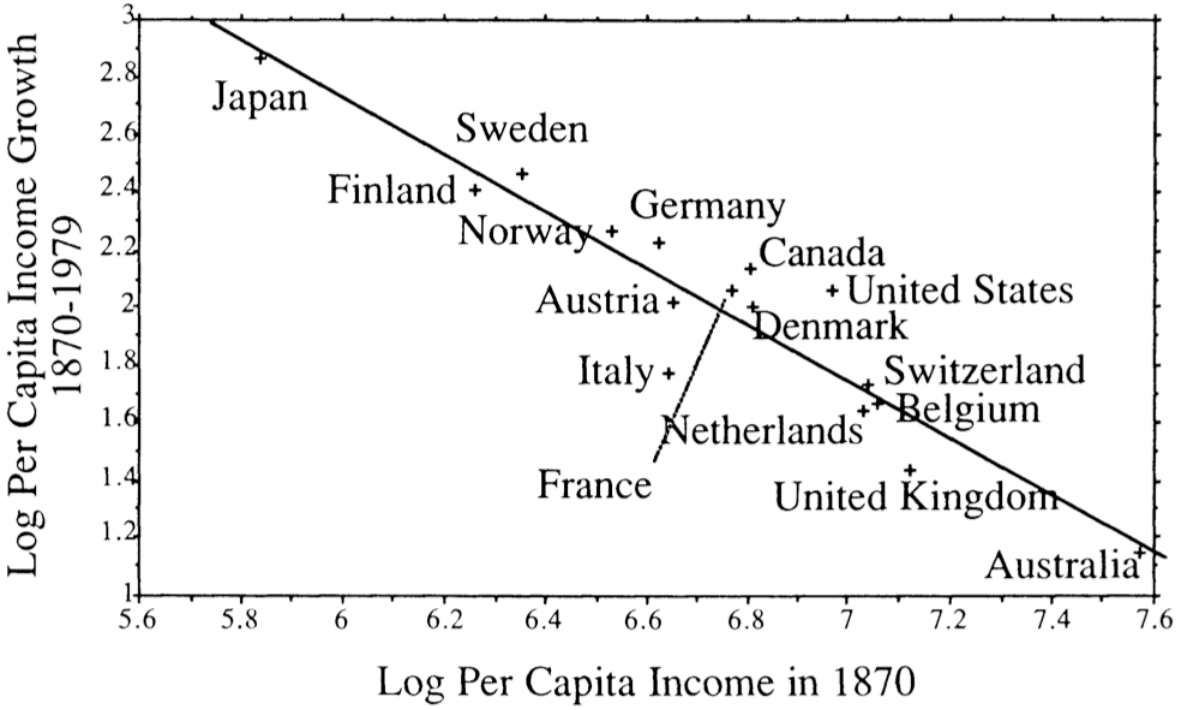


FIGURE 1. PER CAPITA GNP REGRESSION FOR MADDISON'S SIXTEEN

Once-Rich Twenty Two

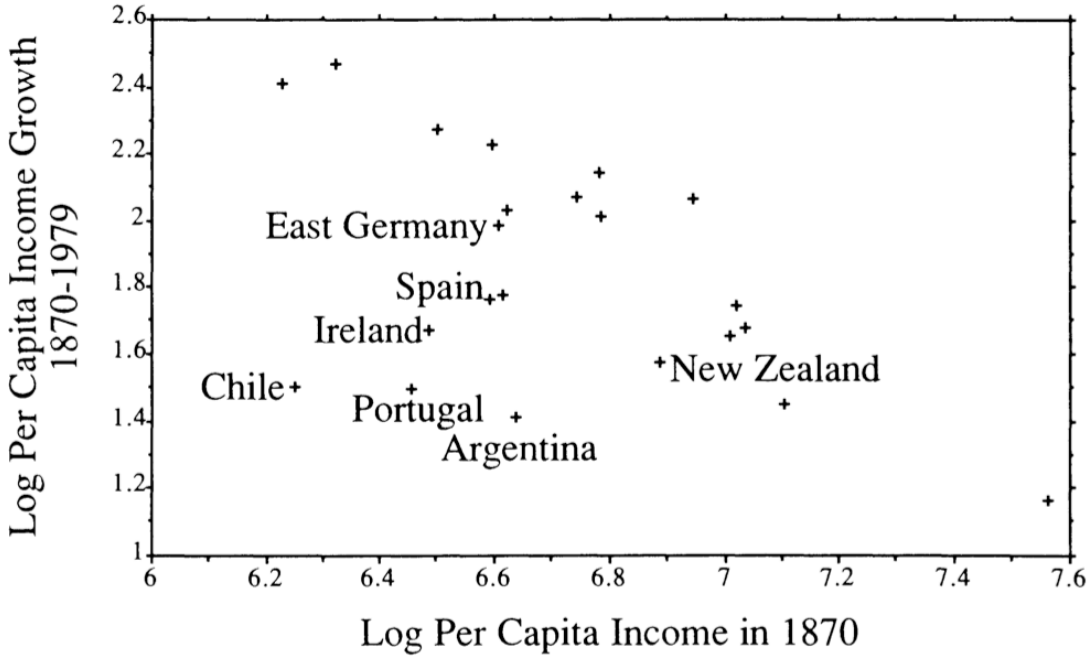
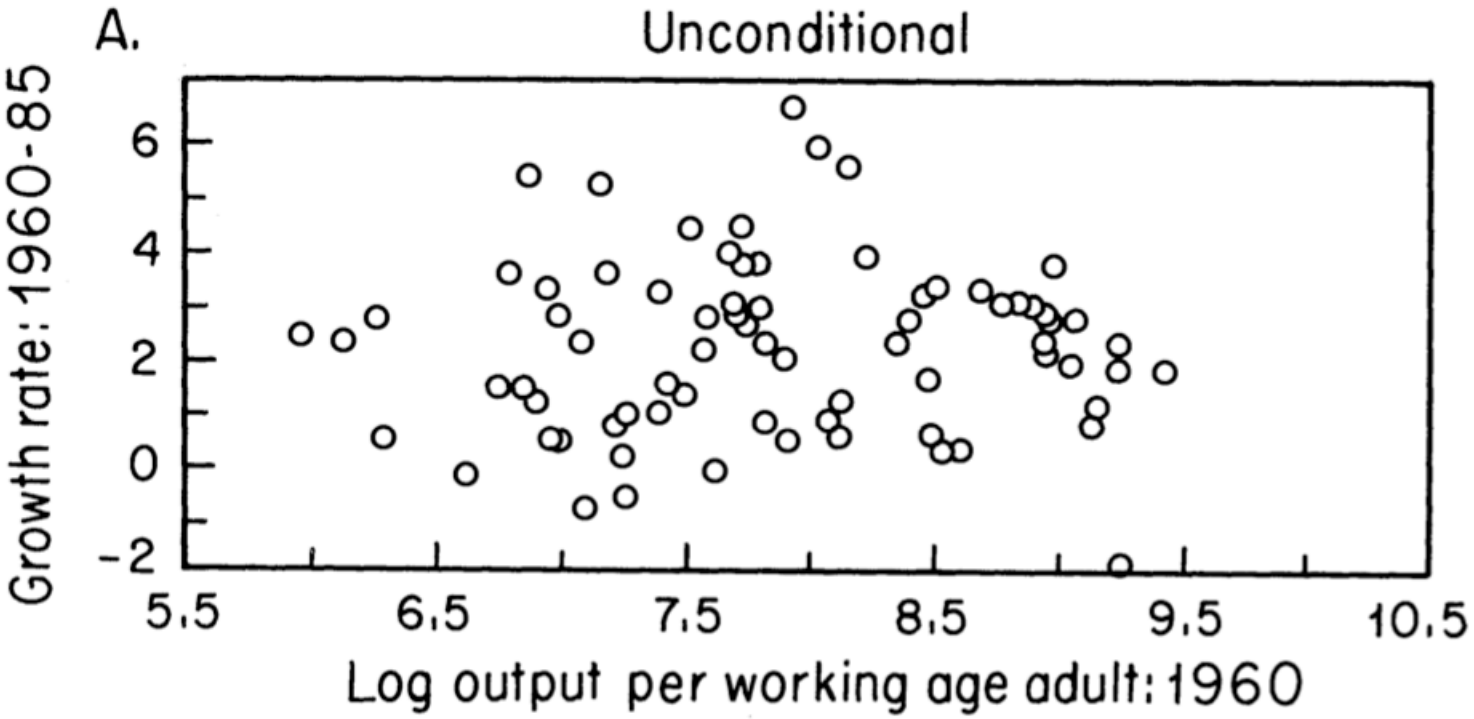


FIGURE 2. 1870 PER CAPITA INCOME AND SUBSEQUENT GROWTH FOR THE ONCE-RICH TWENTY-TWO

Mankiw, Romer, and Weil Sample



Correlations I: Mankiw, Romer, and Weil

TABLE V

TESTS FOR CONDITIONAL CONVERGENCE

Dependent variable: log difference GDP per working-age person 1960–1985			
Sample:	Non-oil	Intermediate	OECD
Observations:	98	75	22
CONSTANT	3.04	3.69	2.81
	(0.83)	(0.91)	(1.19)
ln(Y60)	−0.289	−0.366	−0.398
	(0.062)	(0.067)	(0.070)
ln(I/GDP)	0.524	0.538	0.335
	(0.087)	(0.102)	(0.174)
$\ln(n + g + \delta)$	−0.505	−0.551	−0.844
	(0.288)	(0.288)	(0.334)
ln(SCHOOL)	0.233	0.271	0.223
	(0.060)	(0.081)	(0.144)
$\overline{R}^2$	0.46	0.43	0.65
s.e.e.	0.33	0.30	0.15
Implied λ	0.0137	0.0182	0.0203
	(0.0019)	(0.0020)	(0.0020)

Note. Standard errors are in parentheses. Y60 is GDP per working-age person in 1960. The investment and population growth rates are averages for the period 1960–1985. $(g + \delta)$ is assumed to be 0.05. SCHOOL is the average percentage of the working-age population in secondary school for the period 1960–1985.

Correlations II: DeLong and Summers

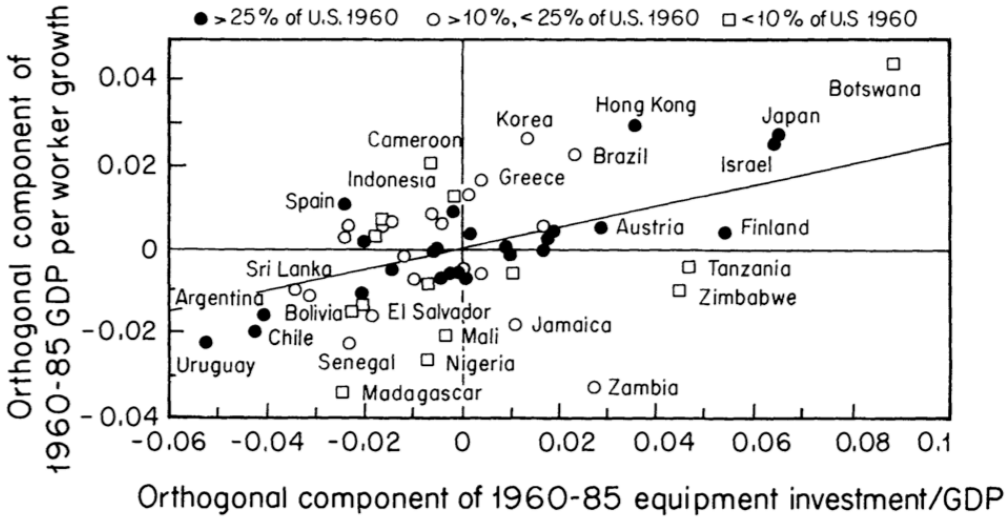


FIGURE VI
Partial Scatter of Growth and Equipment Investment, 1960–1985

$$\begin{aligned}(1')\quad \text{GDP/wkr Gr} = &-0.031\ (\text{LF Growth}) + 0.020\ (\text{Rel. GDP Gap})\\ &\quad (0.198) \qquad\qquad (0.009)\\ &+ 0.265\ (\text{Equip}) + 0.062\ (\text{Nonequip})\\ &\quad (0.065) \qquad\qquad (0.035)\\ n = 61 \qquad &R^2 = 0.291 \qquad \text{RMSE} = 0.013\end{aligned}$$

Continents and Variables…

The lack of effect of continent dummies in the larger sample is perhaps worth a further note. Much of the identifying variance in our regressions does come from a comparison of East Asia to South America, but there is substantial variation within continents as well. Considering islands and peninsulas along the coast of Asia, Hong Kong, Japan, and Korea have low equipment prices, high equipment quantities, and rapid growth; while Sri Lanka and the Philippines have high equipment prices, low quantities, and slow growth. Argentina, Chile, and Uruguay are poorly performing South American nations, but Brazil has performed well. In Africa, Senegal, Madagascar, and Zambia have performed badly, but the Ivory Coast, Botswana, and Tunisia have all grown relatively rapidly.

The high productivity sample lacks these within-continent contrasts. The high productivity sample contains the United States, Canada, fast-growing Asian nations, slow-growing Latin American nations, and many intermediate European nations. Within Latin America the association between growth and equip- ment investment is strong. Within Europe it is not. And there are many more European than Latin American data points in the sample…

We are not sure how to interpret-this association between the World Bank's outward orientation measure and our equipment investment measures. Korea, for example, which the World Bank treats as strongly outward oriented, has not attained its outward orientation by keeping relative prices free, but has sought instead to promote and heavily subsidize heavy and export industry. It may well be that promoting equipment investment and spurring export growth go hand in hand…

Causes and Markers of Good Policies

Causes:

- A more developed financial system…
- A high savings rate…
- A low tariff on imports of (foreign-made) capital goods…
- A "realistic" exchange rate…
- Government subsidies to export manufacturers (and other manufacturing subsidies)…

Markers:

- High expected profits produced by a skilled and well-educated labor force…
- High expected profits produced by an honest and non-corrupt government…
- "Other things going right"…

Taken as a group, poor countries did not close any of the gap relative to the world's industrial leaders up until the mid-1980s. Poor countries have relatively low shares of investment in national product: capital goods are relatively expensive, meaning that even a hefty savings effort translates into little increase in the capital stock; savings rates are relatively low; and taxes are siphoned off to maintain the incomes of politically powerful groups rather than to support public investment projects.

Yet economies that have managed to curb population growth and boost savings and investment have managed to close the gap vis-à-vis the world economy's industrial core faster than anyone would ex ante have believed possible.

The general conclusion is one that either Adam Smith or Karl Marx would have found natural: market economies prosper and grow when they are managed in the interests of the business class. When governments intervene to shift prices and quantities in order to distribute income away from the productive and entrepreneurial classes-both current and prospective future members of the bourgeoisie—and toward others, whether urban consumers, bureaucrats, or small-scale inefficient rice farmers—economic growth and development suffers.

Poor countries could grow rapidly if their governments took a long-run view of their people's interest and followed appropriate policies. But what pressures are there to push governments-especially unelected, non-legitimate modern dictatorships-to take a public-spirited long-run view? W.W. Rostow recounts a visit by President Kennedy to Indonesia in the early 1960s; Kennedy talked about economic development, and a South Asian development bank to provide capital for Indonesia's economic growth. The Indonesian dictator Sukarno's response? "Mr. President, development takes too long. Give me West Irian [province to annex] instead…"